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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,782	03/31/2004	Kiyoshi Mita	14225-049001 / F1040149US	5223
26211	7590	11/29/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			CHU, CHRIS C	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/813,782

Applicant(s)

MITA, KIYOSHI

Examiner

Chris C. Chu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 7 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 3, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Request for Continued Examination***

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 21, 2005 has been entered. An action on the RCE follows.

### ***Response to Amendment***

2. Applicant's amendment filed on October 21, 2005 has been received and entered in the case.

### ***Claim Objections***

3. Claims 6 and 7 are objected to because of the following informalities:

(A) Claims 6 and 7, line 1, "claim 1 wherein" should be --claim 1, wherein--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

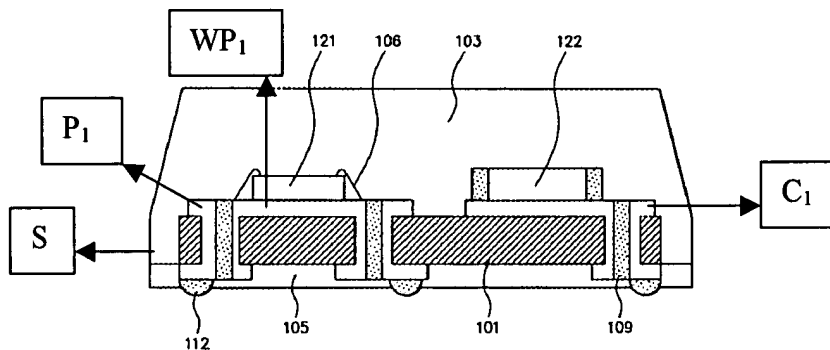
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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 3, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda (U. S. Pat. No. 6,014,318).

Regarding claim 1, Takeda discloses in e.g., Fig. 4 a semiconductor device (The device in Fig. 4), comprising:



- a mounting substrate (105; see Fig. 4 and column 1, lines 33 – 34) having a first main surface (the surface where the chip 121 is formed) and a second main surface (the surface where the external contacts 112 are formed) opposite the first main surface (see Fig. 4);
- a step portion (101) formed in a periphery of the first main surface of the mounting substrate (see Fig. 4);
- a first conductive pattern (C<sub>1</sub> in the above figure) formed on the first main surface of the mounting substrate (105) located inside the step portion (see e.g., Fig. 4);
- a second conductive pattern (112) formed on the second main surface of the mounting substrate (see Fig. 4);

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- a semiconductor element (121) fixed to the first main surface of the mounting substrate and electrically connected (by wire 106) to the first conductive pattern (C<sub>1</sub>); and
- sealing resin (103; column 1, line 35) covering the first main surface of the mounting substrate and the step portion to seal the semiconductor element (see Fig. 4),
- wherein a side surface (S in the figure of the previous page) of the sealing resin (103) and a side surface of the mounting substrate (105) are located on a same plane (see the figure in the previous page).

Regarding claim 2, Takeda discloses in e.g., Fig. 4 the first conductive pattern (C<sub>1</sub>) comprising a bonding pad (the bonding area of C<sub>1</sub> that is bonded to the wire 106) electrically connected to the semiconductor element (121) through a fine metallic wire (106) and a plating line (P<sub>1</sub>) extending from the bonding pad to the step portion. Furthermore, the term “plating” is a process designation, and would thus not carry patentable weight in this claim drawn to a product. See *In re Thorp*, 227 USPQ 964 (Fed. Cir. 1985).

Regarding claim 3, Takeda discloses in e.g., Fig. 4 a plurality of the bonding pads (the bonding areas of C<sub>1</sub> that are bonded to the wire 106) being arranged so as to surround the semiconductor element (121; see Fig. 4), further comprising a wiring portion (WP<sub>1</sub>; see the figure in the previous page) extending from each of the plurality of bonding pads under the semiconductor element (see Fig. 4).

Regarding claim 6, Takeda discloses in e.g., Fig. 4 the mounting substrate (105) comprising a resin (Since the substrate 105 includes mounting portion 101 which is made by epoxy resin, the substrate 105 comprises a resin material; column 1, lines 34 and 35).

Regarding claim 7, Takeda discloses in e.g., Fig. 4 the second conductive pattern comprising electrodes (112) arranged in a matrix (see Fig. 4).

### *Response to Arguments*

6. Applicant's arguments with respect to claims 1 - 3 have been considered but are moot in view of the new ground of rejection.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pritchett et al., Igarashi et al. and Kondo et al. disclose a step portion in a substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is 571-272-1724. The examiner can normally be reached on 11:30 - 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 517-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris C. Chu  
Examiner  
Art Unit 2815

C.C.  
Friday, November 25, 2005



Kenneth Parker  
TC2800